MS200
2MP USB PEN MICROSCOPE

USER'S MANUAL

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INTRODUCTION

FUNCTIONS AND APPLICATIONS

The MS200 2 Mega-Pixel USB PEN MICROSCOPE is a new electronic product for the micro observations. It is a tubular imaging system consisting of an optical lens, an image sensor, an illumination mechanism, and an image transfer control circuit connected to a computer. You can display the images captured by the PEN MICROSCOPE on the computer screen, store them on the computer, print them, or send them over the Internet.

As a USB microscope, it can magnify electric circuits, stamps, coins, antiques, insects, machines, fabrics, food, decorations, etc. and can also help visually impaired persons magnify small text for reading.

Attention

Before using of this product, please read the instructions in this manual to ensure its correct use.

SAFETY INSTRUCTIONS

1. The socket that the computer is plugged in must be properly grounded, as the computer supplies power to this product. If in any doubt, please have a professional electrician check and verify the grounding to ensure safety.
2. Never use this product in the rain. Do not let this product come in direct contact with steam, vapor, water, or liquids of any kind. Such contact can cause irreparable damage that is not covered by warranty.
3. This product contains delicate and precision components. Be gentle when using it and avoid harsh handling or excessive force that may cause damage to the product.
4. The temperature of the handle increases slightly during use and gets a little warm. This is normal. If the product is overheated and hot to the touch, cut off the power immediately and contact us for repair.
5. Never leave the product unattended. Unplug from the USB port after use.
6. Do not disassemble this product. Disassembling this product will result in irreparable damage. PacketMicro is not responsible for damage resulting from disassembly of the product by the user. In case of any difficulties in using the product, please contact us.
7. This product may be used by children under supervision of an adult. Never give this product to a child to use or play by him or herself. Keep this product out of reach of children.
8. When not in use, put the handle in the transparent sleeve and store it in a tightly sealed box to avoid moisture and decay. Damages resulting from improper storage are not covered by the warranty.
9. When using this product for eye examination, the illumination should be as dim and the examination time as short as possible. Never use this product to examine the eyes of infants or young children.
10. The cable of this product has been strictly tested. To ensure safe use, do not replace it.

SYSTEM REQUIREMENTS

For best picture quality, the following specifications are recommended:

1. IBM PC compatible computer
2. Intel Pentium III processor or above
3. 128M RAM or above
4. At least 3 USB ports (USB 2.0 port is recommended.)
5. Microsoft Windows XP, Vista and Windows 7

TECHNICAL SPECIFICATIONS

1. DSP: High Quality Digital Image Monarch Processor.
2. Sensor: High-quality CMOS sensor
3. Resolution: 1600X1200
4. Interface: USB2.0.
5. Frame rate: 30 frames/sec (CIF and VGA).
6. Focal distance: 5mm - infinity
7. Magnification: 1x - 200× (at 5mm FOCUS and display on 17” screen by 1600X1200 resolution)
8. Diameter: 8.2mm
9. Length: 160mm
10. Timing snap: 10 seconds
11. Image freeze: Just tap the space bar (for 640x480 resolution)

PACKING LIST

ITEM		QTY.	
PEN MICROSCOPE		1	
ADJUSTABLE STANDARD		1	
REFLECTOR TUBE		1	
CURETTE		1	
RUBBER SLEEVE		1	
CD		1	
MODEL	PACKAGE	ITEM	USB
MS200	GIFT BOX	SIZE	18.5 x 12.5 x 6.7
		QTY	1
		WEIGHT	577g

Size scale: centimeters. The package may be changed without notice.

DIRECTIONS FOR USE

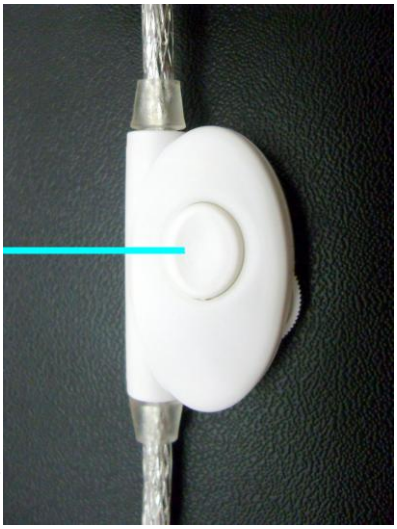
SET UP

To avoid mistakes in the process, please follow these steps:

- Take the stand parts out of the box and put it together according to right photo.
- Insert the pen microscope into the holding hole on the stand and then slightly screw down the knob.
- Take the mini-CD out of the box and place it into the CD-ROM drive. Find the icon of ‘ehe.exe’* and copy the ‘ehe.exe’ to your PC.
- Plug the PEN MICROSCOPE USB connector into the USB port, and double click on the icon of ‘ehe.exe’ to open the image window.

DIRECTIONS FOR USE

Rotate the dial on the USB cable to controls the brightness of the LED on the USB OTOSCOPE. After a short while you should see the image captured by the USB HANDHELD MICROSCOPE on the computer monitor.

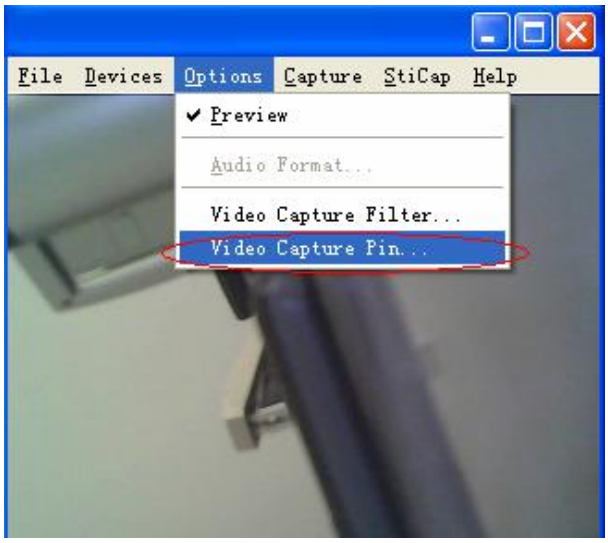


OPEN IMAGE WINDOW

Double click on the icon ‘ehe.exe’ to open an image window on the screen. After a few seconds the USB HANDHELD MICROSCOPE will begin to take images in the window. If the picture comes from your PC camera or any other device, please click on ‘Device’ on the top line of the image window and open the pull down menu. Choose the proper USB camera and close the pull down menu.

Click on ‘OPTIONS’ and click on ‘VIDEO CAPTURE PIN’. Choose one of image window size in the drop-down menu and click on ‘OK’ to confirm. See pictures below:

TAKE PHOTOS

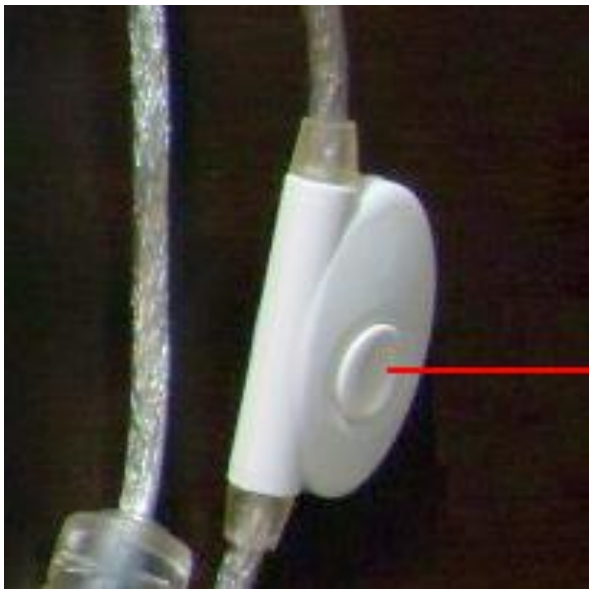


1. Click on ‘Option’ on the top of image window.
2. Then click on ‘High Resolution’ in the drop-down menu to make sure there is a tick mark here.
3. Close the drop-down menu.
4. Push down the button of the dimmer that located on the USB cable to freeze an image.

The photos you have taken will be saved in the computer and display an icon on the screen.
If your system could not freeze an image please follow steps to make it works:

1. Click on ‘file’ that is on the top of image window.
2. Click on the ‘set photo folder’
3. Designate the folder you want to save the photos
4. Click OK to confirm

More Ways to Take Photos in LOW Resolution



1. Click on ‘Option’ on the top of image window.
2. Uncheck ‘High Resolution’ in the drop-down menu to make sure there is no check mark.
3. Close the drop-down menu.

Now you get below functions:

IMAGE FREEZ

Tap the space bar to freeze an image.
To save this image, you can hit the Return key for saving the image as a photo.
Tap the space bar again to activate the image window.

TIMING SNAP

Tap the F5 key to enable a timing snap.
The snap will be delayed 10 seconds after the F5 key was tapped. The countdown is shown at lower left corner of the image window.
If you could not get a clear photo by push down the snap button the timing snap may help.

RETURN KEY SNAP

Just tap return key to take a photo.

WARNING

The top line of the image window will be blue color while it works properly. It will be changed into light blue when user operates on background and the snap function will be lost during this color. Just click any where inside of the image window to change it back to blue.

*The software may be changed without of notice. Please contact PacketMicro for any update.

RECORDING VIDEO

For taking a video:

1. click on ‘Video Capture’
2. click on ‘Set Time Limit’ and input how many seconds the video you want to take and tick the ‘use time limit’
3. click on the ‘Capture’ again
4. click on ‘Start Capture’
5. click on ‘OK’ to start a record

The video will be taken and stopped automatically when time limit is reached.
The video is an AVI format.
User may move the AVI file to any folder as other documents.

FOCUSING

The focus distance can be adjustable by turning the knob of the pen microscope (see right photo).

And the pen microscope can be move up and down by turning the pillar (see left photo) for getting larger photo area or smaller photo area.

USE RUBBER SLEEVE

First of all, focus the image of the pen camera at the proper distance that you feel the magnification is satisfied. Put the rubber sleeve on the top of pen camera and to adjust the sleeve to a position that the focus point is at inner place of the sleeve. While you are using the pen camera you may

touch the objective with the end of sleeve and slightly push the sleeve down to find the clear focused image. This is what we called “soft focus (SF)”.
By using the SF you can look into a small hole or slit by focusing on many different distance levels.
SF can be used for the inspection of electronic parts, machine parts, skin, hair and so on.

REFLECTOR TUBE

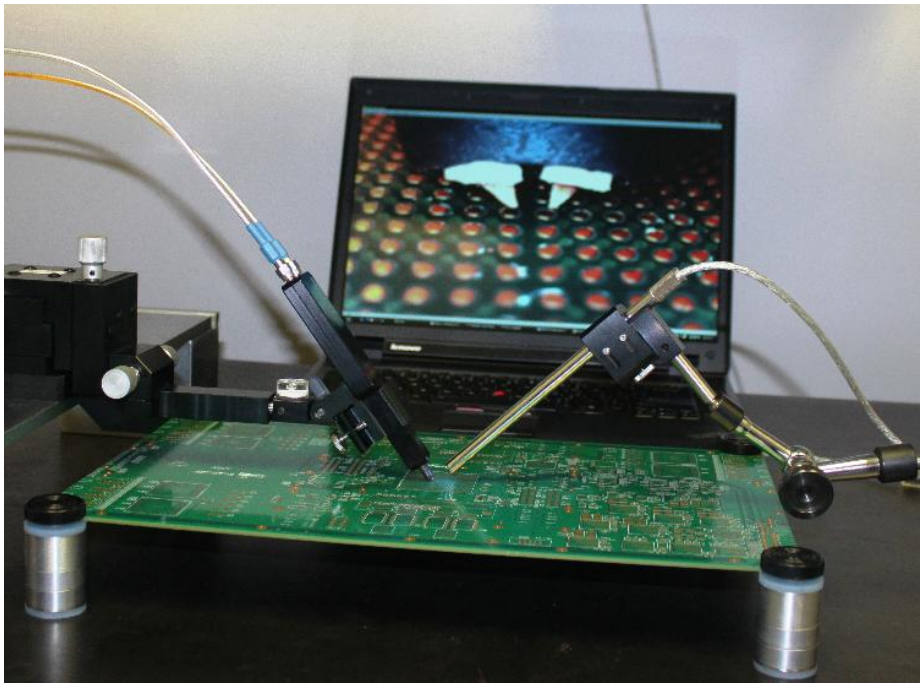
Reflector tube can be used to take image of hard to reach places such as PCB in a chassis.

The pen camera should be focused on any surface that is at the distance of 10mm to 20mm far from the opening of the reflector.

Take the reflector tube out of the peel pouch and put it on the pen camera like the photo shows.

PEN MICROSCOPE FOR PCB PROBING

This USB pen microscope is also a good tool for engineers to probe PCB’s. When connected to a positioner such as PacketMicro’s TP100 Flex Positioner as the one in the picture, the microscope ensures engineers to make accurate contact of the ever-shrinking trace sizes.



Post-Sale Services

Limitations and exclusions

Please keep all the receipts of your purchase in a safe place. You need to produce the unaltered and original receipts to receive warranty coverage.

The warranty only covers the product if it is used under normal operation conditions. However, the following are not covered under the warranty:

1. Damages resulting from unauthorized disassembly or assembly of the products by the customer
2. Damages caused by fitting of improper components to the product
3. Damages resulting from unauthorized attempts to repair or to alter the product
4. Damages caused by water or other liquid
5. Gross distortion, scratches, discoloration, or damage of the covering
6. Cracks, scratches, and mold spots on the lens.
7. CMOS sensor is burned or apparently scratched
8. Damages to the PCB board (such as burned PCB board) due to misuse

Repair Service Card

Product model:

Date of repair	
Customer's name & phone number	
Description of faults	
Place of repair	
Results	